PURPOSE AND NEED

At Fort Washington, Fort Washington Park, Prince George's County, Maryland, the National Park Service proposes to stabilize the fort and arrest problems contributing to the short- and long-term deterioration of the historic Fort Washington structure. The purpose of this action is to correct deterioration of the fort. This action would be accomplished in two phases. Phase 1 would address issues of wall stability and problems with the supporting drainage system. Phase 2 would stabilize supporting earthen terraces, slopes, structural buildings, and features. Vegetation encroachment that compromises the fort's integrity would also be removed under both phases.

Repair and rehabilitation are needed to address ongoing structural and cosmetic deterioration of Fort Washington. The fort has been subject to changes in use and management over time, decades of vacancy, repairs made with inappropriate materials, and periods of neglect. If a concentrated rehabilitation effort employing appropriate materials and methods is not undertaken, further degradation would occur. This could result in permanent loss of historic fabric and character. Such a condition would be inconsistent with the park's mandate to protect and interpret our nation's valuable cultural heritage.

In addition, deterioration of the fort has resulted in closure of approximately 60 percent of the structure to visitors. Areas considered unsafe include the southwest demi-bastion, soldiers' barracks, the officers' quarters, and the lower-level esplanades. The guard house and guard room remain open, but the ceiling appears to be near failure, and these sites may also soon be closed. The main gate house has been extensively damaged by water, causing structural weakness and fostering persistent moss and algae growth. It is imperative that the fort be protected for future public use and enjoyment (NPS, Project Status Report, September 2002, Federal Register 1998).

An environmental assessment (EA) analyzes the preferred alternative and alternatives and their impacts on the environment. The preferred alternative would protect historic resources, with few adverse effects to natural resources and to other cultural resources. This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 and regulations of the Council on Environmental Quality (40 CFR 1508.9), and the National Park Service's Director's Order (DO) -12 (Conservation Planning, Environmental Impact Analysis, and Decision-making), and Section 106 of the National Historic Preservation Act of 1966 (as amended).

OBJECTIVES

The preservation of vital cultural and natural resources, as well as the protection of public health and safety, are mandated by National Park Service policy. The primary objectives for stabilization and rehabilitation of Fort Washington were determined by park and regional staff, and must be met to ensure successful project implementation. The objectives of this action are to:

- Prevent the loss of valuable historic resources;
- Comply with the park's mandate to protect and interpret this portion of the American Coastal Defense system; and
- Provide long-term remedies for damage caused by the fort's inadequate drainage system and ongoing vegetation encroachment.

PURPOSE AND SIGNIFICANCE OF THE PARK

ENABLING LEGISLATION

Fort Washington Park was established in 1930 through Congressional enactment of the Capper Cramton Act, which directed the National Park Service to provide historical interpretation of the development of American coastal defenses from 1808 through 1946. The purpose of the park, as defined in this enabling legislation, is "to preserve the historic coastal defense fortification and to provide open space for recreational activities."

In 1794, President Washington planned for the original fort, Fort Warburton, to be constructed at this site to defend Washington, D.C. After Fort Warburton was destroyed in the War of 1812, the present Fort Washington was constructed on the site between 1814 and 1824. The fort was heavily armed and garrisoned through World Wars I and II, and during its later years was the Adjutant General's Training School. The 341 acres of parkland were obtained by the National Park Service as a terminus for the Maryland side of the George Washington Memorial Parkway.

SIGNIFICANCE

Fort Washington is listed in the National Register of Historic Places and includes 25 historic structures, natural areas, rustic trails, and a scenic waterfront with a view of George Washington's Mount Vernon home across the Potomac River. The fort itself is the largest fortification included in the Fort Circle Defenses of Washington, D.C., and is the only masonry fort constructed to defend the nation's capital prior to the Civil War (see Figure 1).

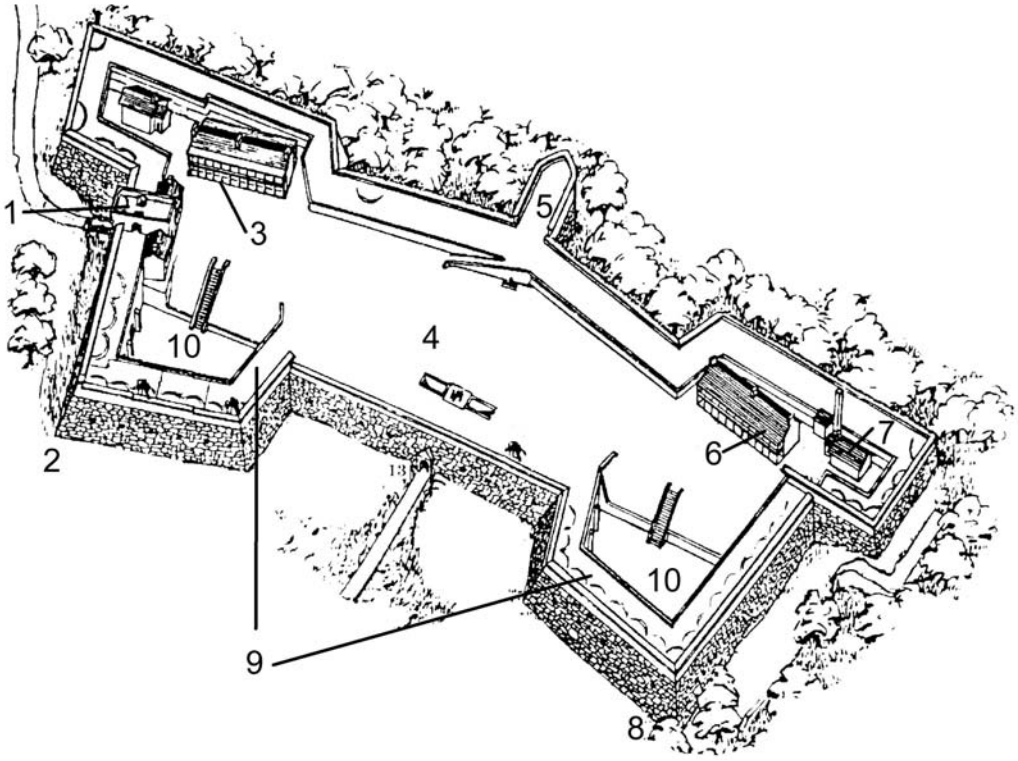

FIGURE 1. FORT WASHINGTON PLAN VIEW

1. Main gate and gatehouse
2. Northwest demi-bastion
3. Officers' quarters
4. Parade ground
5. Caponiere
6. Soldiers' barracks
7. South powder magazine
8. Southwest demi-bastion
9. Terreplein
10. Northwest and southwest esplanade

Its walls are 45 to 60 feet high and enclose nearly three acres of land. Eight un-mounted concrete Endicott Period batteries and torpedo structures surround the fort and were heavily armed during World Wars I and II. For over 183 years, this fort has been owned by the federal government, serving as a defense outpost for Washington, D.C., a training facility for military and civilian forces, and now as an educational and recreational tool for hundreds of thousands of visitors annually.

Fort Washington's significance results from its contribution to the defense of the capital. The historic fort, which occupies the site of the earliest fortification built to protect Washington D.C. (see Figure 2), was used by the U.S. Army from 1808 to 1946. Nearly one-third of the park is devoted to outdoor recreation, and the remainder is designated as a historic natural area.

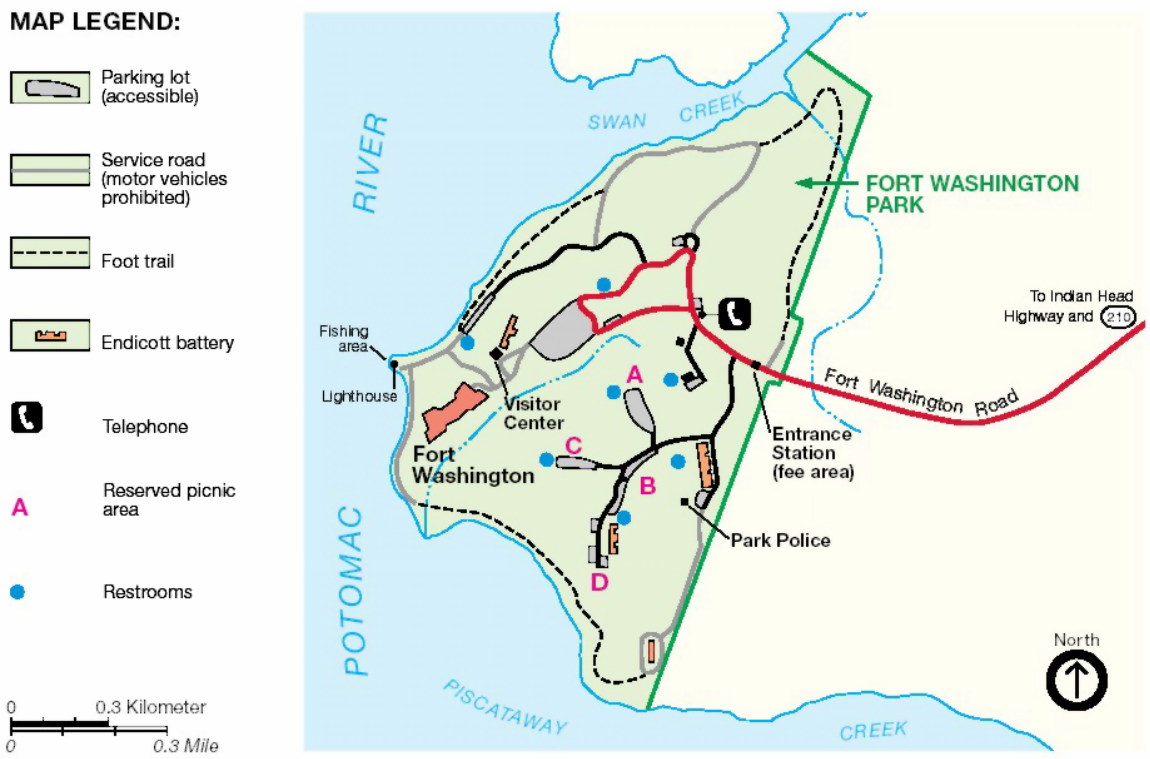

FIGURE 2. LOCATION AND SITE MAP FOR FORT WASHINGTON PARK

PROJECT BACKGROUND, PREVIOUS PLANNING, SCOPING, AND VALUE ANALYSIS

PROJECT BACKGROUND

Fort Washington lies near the banks of the Potomac River in the lush woods of Maryland. This region has a warm, humid growing season and is ideal for a wide variety of vines, shrubs, and trees – which grow on and into the masonry and earth filled areas of the fort. Vegetation is present on many of the fort walls, and in some locations shrubs and trees are firmly planted into the structure (see Figures 3 through 5).

The U.S. Army and the National Park Service have tried many times to control vegetation growth on the fort. In the early 1950s, major repairs were undertaken because of vegetation damage to the fort. Repairs have continued since this undertaking, and the preferred alternative is a result of a funding request that originated in the late 1990s.

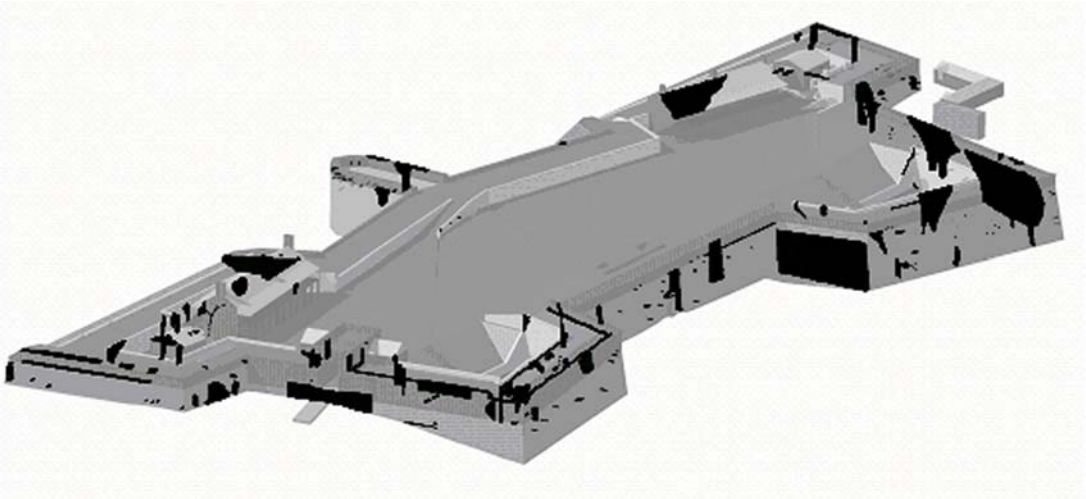

FIGURE 3. LOCATIONS OF DAMAGING PLANT GROWTH, FORT WASHINGTON

FIGURE 4. VINES ON FORT WASHINGTON WALL

FIGURE 5. SHRUBS ON FORT WASHINGTON WALL

In addition to invasive vegetation, the fort is also subject to cold, damp winters with below-freezing temperatures. The freeze-thaw cycle has contributed to the loosening and deterioration of the fort's masonry. This allows rainwater and snowmelt to enter the fort structure through small cracks and crevices in the fort walls. The structural integrity of some wall sections is now questionable. Bulging and cracking on interior and exterior fort walls can readily been seen.

From ancient times through the 19th century, lime was used in building to make mortar, concrete, stucco, and plaster. Lime mortar is soft, porous, and changes little in volume during temperature fluctuations. These characteristics make it a good choice for use on historic buildings. This mortar inherently possesses very low compressive strength, attaining between 50 and 300 pounds per square inch in 28 days. This low strength is beneficial in allowing masonry walls to "flex" without cracking (Ravi Gundu Rao & Associates 2003).

In 1824, Portland cement was introduced to the construction market. Portland cement sets very quickly and expands and contracts (with temperature changes) about the same as steel. These properties allowed development of steel-reinforced concrete structures. Excitement over the product allowed the use of Portland cement mortars to overtake use of lime mortars and dominate the construction industry.

However, Portland cement in mortar mix yields hard, inflexible joints, which are wholly unsuited for use in historic structures originally built with hydraulic lime mortars (see Figure 8). By 1895, the inappropriate use of Portland cement mortars became apparent as deterioration in historic masonry structures accelerated.

Over the past 50 years, repairs made to Fort Washington have included the use of Portland cement mortars. In the 1950s and 1960s, major work was undertaken to address invasive vegetation and the superficial and structural damage caused by deteriorating masonry. Repairs were undertaken again in the 1980s. In the late 1990s, the park requested funding for the repair of the northwest demi-bastion walls, main gatehouse, barracks, officers' quarters, southeast bastion, and southwest demi-bastion, and to address slope stability and drainage issues (see Figures 6 and 7). The project currently proposed is a result of that funding request.

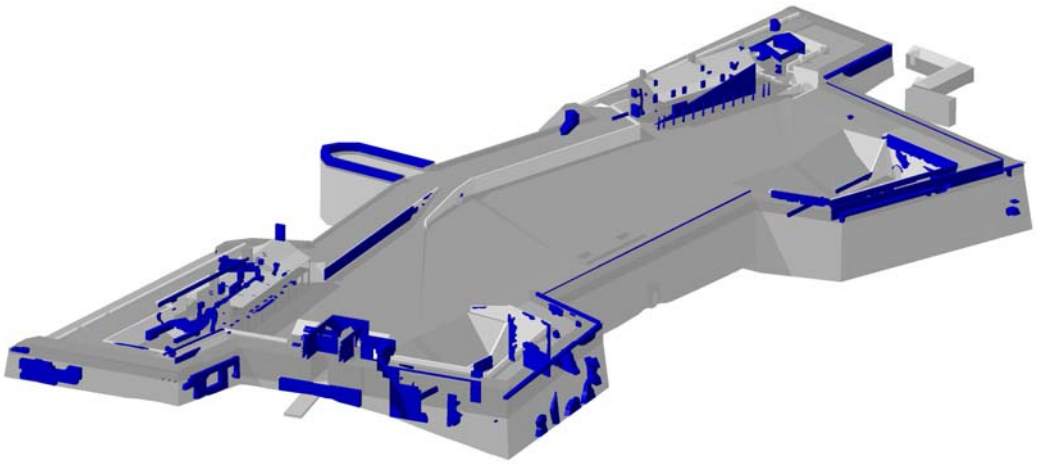

FIGURE 6. LOCATIONS OF PORTLAND CEMENT MORTAR, FORT WASHINGTON

FIGURE 7. PORTLAND CEMENT REPAIRS ON LIME MORTAR

Currently, all structures and grounds within Fort Washington need some form of repair, restoration, or stabilization. From the main gate to the enlisted men's barracks, practically every aspect of the 175-year-old structure needs attention (Arthur Beard Engineers 1999).

Deterioration of the masonry and brick walls has been accelerating over the past decade, due to the increasing saturation of the structure from rain and snowmelt (see Figure 9). Several thousand bricks on the face of the walls show signs of weakened or absent mortar joints. Vegetation has grown through the cracks, crevices, and orifices of the walls, and through ceilings and floors of the masonry structure (Arthur Beard Engineers 1999).

Inadequate drainage within and beneath the structure and less than optimal grading adjacent to the fort have caused destabilization of the foundation at several locations. This instability has resulted in shifting walls and development of many lengthy cracks. In early 1996, a large section of the parade wall collapsed due to improper drainage, weakened mortar, and other weather- and age-associated factors.

In the 1970s, the exterior wall (façade) of the northwest demi-bastion was repointed with a mixture of Portland cement. The construction date of this section was approximately 1844. The façade collapsed in 1999 because water trapped behind the Portland cement could not escape. The expansion and contraction of the freeze-thaw cycle had caused structural weakness. The initial collapse resulted in approximately 10,000 bricks falling, leaving a substantial hole (NPS 2002b).

The NPS obtained emergency funding to repair the collapsed wall, and this work was completed in early 2004. The repairs include replacing the fallen and dislodged brick, waterproofing the terreplein above the site, paving the gun mounts, and improving the surface drainage runoff. All repairs were made exclusively with lime mortar (NPS 2002b).

Currently, there are critical structural problems at the east esplanade wall, the soldiers' barracks, the gatehouse, and the powder magazine. There are also drainage problems at the main gate, northwest and southwest demi-bastions, north and south parade grounds, south powder magazine yard, and south exterior surface drainage.

FIGURE 8. USE OF INCOMPATIBLE MATERIALS AND METHODS

FIGURE 9. WATER DAMAGE IN GATE HOUSE

Park staff estimate that 60 percent of the fort is currently inaccessible to visitors due to structural instability and unsafe conditions. The southwest demi-bastion interior is closed due to poor drainage and seasonally high grasses. Access to the exterior of the fort on the south and west sides is limited due to failure of the slope and dense vegetative growth. Neither the soldiers' barracks nor officers' quarters are open to the public due to hazardous roof and flooring conditions. In addition, a great deal of mortar has fallen from the dome of the main gate. It is anticipated that this brick section could soon fail. The north and south esplanades have also been closed due to instability on the steep slope leading down from the

parade ground. However, access to the northwest demi-bastion and terreplein has been reopened since the emergency repairs were completed.

PLANNING CONTEXT

Project Planning

After the collapse of the northwest demi-bastion wall in 1999, the urgent need to stabilize Fort Washington was fully apparent, and long-term planning for rehabilitation was initiated. Once the planning, funding, and design for rebuilding the northwest demi-bastion were accomplished, the NPS began to address the overall needs of the fort.

To begin the planning process, the overall condition of the fort structure had to be determined. A pre-design assessment was initiated that included fieldwork, gathering and researching historic documents and condition assessments, consultation with historical architects and experts in using lime mortar, and input from NPS historians and archeologists. Advanced technologies (such as thermographic imaging and penetrating radar) were used to determine the condition of structures not visible on the fort's exterior (see Figures 3 and 6, above).

At a value analysis workshop in June 2002, the planning team confirmed that issues relating to the condition of the fort were in accord with the 1982 historic structures report that recommended: 1) repairs to mortar, brick, and stone construction materials; 2) a drain system survey, soils analysis, and structural monitoring; 3) stabilization and repointing of masonry; and 4) storm drain system repairs and slope stabilization. These are the critical stabilization issues to be addressed under the preferred alternative.

Relationship to Other Fort Washington Park Plans

The preferred alternative represents a continued commitment to preserve park resources. The proposed alternative would not conflict with any ongoing or planned management activities within the park. Park staff have determined that there are no projects outside the park boundaries that would contribute to cumulative effects of the preferred alternative. The following plans will be included in the assessment of impacts in the "cumulative effects" sections of the impact analyses.

Removal of contaminated soils between the soldiers' barracks and powder magazine. The park is planning to excavate contaminated soils left by a 500-gallon oil storage tank located at the south end of the parade ground. The tank was used to supply fuel to a furnace room, and was removed in the 1950s. The remaining concrete pad and an area approximately 10 feet by 12 feet and 6 to 8 feet deep would be excavated and removed to an approved disposal site. This project is expected to occur concurrently with the preferred alternative.

Lighthouse improvements. The park recently received approval from the State Historic Preservation Officer to proceed with minor repairs to the historic lighthouse (also known as a bell tower) near the park's fishing pier. The project would include replacing 500 square feet of exterior woodwork and would occur concurrently with the preferred alternative.

Upgrade road between Visitor Center and Fort Washington. The park is planning to replace the asphalt surface of the roadway that leads from the main parking area to the lighthouse/fishing pier area. The surface would be replaced with "grasscrete." Grasscrete is preformed cast concrete designed to allow vegetation to grow through the driving surface, allowing increased infiltration of precipitation and reducing road maintenance needs.

Scoping

National Park Service internal discussions led to identification of the main issues and impact topics to be addressed in this environmental assessment. Preservation and protection of Fort Washington, protection of public health and safety, and improvement of park operations are the primary goals of the stabilization project.

The environmental assessment process under NEPA requires agencies to seek outside suggestions and other input about what should be considered in the EA. This process, called "scoping," involves contacting other Federal, State, and local agencies that might have an interest in the proposed action.

The U.S. Fish and Wildlife Service was contacted regarding endangered and threatened species compliance for this project. A copy of the NPS consultation letter and the U.S. Fish and Wildlife Service response can are provided in Appendix A.

The Maryland State Historic Preservation Officer has been involved at Fort Washington since the collapse of the northwest demi-bastion wall in 1999. A Section 106 consultation letter describing the current project and inviting continuing agency participation was sent to the State Preservation Officer on July 8, 2004. A copy of the letter is provided in Appendix A. As part of the ongoing compliance, this environmental assessment also will be sent to the Advisory Council on Historic Preservation and to the State Historic Preservation Officer for their review and comment. Agency comments on the project will be addressed in the decision document.

Park staff and cultural resource specialists at the National Capital Regional Office have determined that there are no American Indian tribes traditionally associated with Fort Washington Park. Therefore, no tribal or Government-to-Government consultation was initiated prior to this project.

A summary of the consultation and coordination efforts for this project may be found in the "Consultation and Coordination" section of this environmental assessment.

Value Analysis

Description. Value analysis is a problem-solving and decision-making technique used to produce alternatives that achieve all required goals of a project. It involves an interdisciplinary team effort that identifies problems, promotes objectivity, and stimulates creativity.

Goal. Value analysis breaks design into functional components and analyzes these components for their ability to best meet project needs, environmental effects, and cost/benefit ratios. Based on this analysis, the goal is to select the most feasible alternative that meets all the required goals of the project, to some degree.

Process. A systematic process generates alternatives. The top-ranked of these is developed as the recommended solution. During the value analysis workshops in June and September of 2002, the fort's most urgent repair and rehabilitation needs were analyzed, evaluated, and prioritized. These high-priority needs were organized into a single, two-phase project for the proposed stabilization effort. Each phase is further divided into individual critical structural and drainage repairs. The preferred alternatives are presented in "Alternatives Considered" as Alternative B, the preferred alternative.

ISSUES

Issues and concerns affecting this proposal were identified during an internal scoping meeting held at the park in April 2003. The major issues include the following NEPA and Section 106/NHPA compliance-related concerns:

- The park wishes to continue to provide visitor access and interpretation at the fort throughout the course of the proposed action. Visitors would need to be protected and educated regarding the activities and the long-term benefits anticipated from the project.
- An archeological investigation is needed and should be conducted during the structural evaluation of the stone foundation of the soldiers' barracks. Some archeological investigation may also be needed in the northwest demi-bastion esplanade. The archeological work would need to be coordinated with architectural consultants and would be conducted prior to or in conjunction with proposed construction activities.
- The park wishes to protect the natural resources surrounding the fort to the greatest extent possible. This includes using appropriate erosion control and water quality protection measures during ground disturbing activities.
- Lead-based paint has been used in the interior spaces of the soldiers' barracks in the past. To protect the health of the workers, a survey and an appropriate hazardous materials handling and disposal plan must be implemented.

DERIVATION OF IMPACT TOPICS

Specific impact topics were developed for discussion focus, and to allow comparison of the environmental consequences of each alternative. These impact topics were identified based on federal laws, regulations, and Executive Orders; NPS *Management Policies 2001*; and NPS knowledge of limited or easily impacted resources. A brief rationale for the selection of each impact topic is given below, as well as the rationale for dismissing specific topics from further consideration.

Impact Topics Included in this Document

Cultural resources management in the park service are directed by Section 106 of the National Historic Preservation Act; 36 *Code of Federal Regulations* 800; National Environmental Policy Act; Executive Order 13007; Director's Order #28; and NPS *Management Policies 2001*. This topic was retained because the project is focused on the stabilization of Fort Washington, which is a nationally significant historic structure listed in the National Register of Historic Places.

Archeological resources was retained to analyze the potential effects of ground and structural disturbance on a site that was used as a defense installation for the majority of two centuries. *Historic structures* was retained to determine the effects of the two alternatives on the primary resources of the park – fort Washington and is associated historic district. *Cultural landscapes* was retained because the park and its site are representative of an important era in the development of our national defense system. *Museum collections* was retained because the fort contains collection specimens that require protection.

Visitor experience and public health and safety at national parks are managed in accordance with the Organic Act and NPS *Management Policies 2001.* This topic was retained because Fort Washington Park receives approximately 250,000 visitors annually. Stabilization activities would occur within or adjacent to the visitor use area, potentially impacting the visitor experience and public safety.

Park operations were retained because of the potential disruption in routine actions and increased burden on park staff to provide monitoring associated with nearly three years of contractor activities. This topic is addressed in accordance with NPS *Management Policies 2001.*

Vegetation, soils, and **wildlife** are analyzed in accordance with NPS *Management Policies 2001* and because park staff are concerned that project implementation would result in adverse effect to natural resources valued by visitors and the public.

Water quality was retained because park staff are concerned that disturbed soils and staged materials could potentially release sediment into the Potomac River, and in accordance with NPS *Management Policies 2001,* the Clean Water Act, and Executive Order 12088.

IMPACT TOPICS DISMISSED FROM FURTHER ANALYSIS

Air quality: The 1963 Clean Air Act, as amended (42 U.S.C. 7401 et seq.), requires federal land managers to protect park air quality and its related values (including visibility, plants, animals, soils, water quality, cultural and historic resources and objects, and visitor health), while the NPS *Management Policies 2001* addresses the need to analyze air quality during park planning. Section 118 of the 1963 Clean Air Act requires the NPS to meet all federal, state, and local air pollution standards. Section 176(c) of the 1963 Clean Air Act requires all federal activities and projects to conform to state air quality implementation plans to attain and maintain national ambient air quality standards.

Fort Washington Park is located within a Class II air quality containment zone under the 1963 Clean Air Act. Class II areas include all areas of the nation not set aside for stringent air quality control. Class II areas must not exceed the maximum allowable concentration for common air pollutants, including sulfur dioxide and particulate matter as specified in Section 163 of the 1963 Clean Air Act.

Should the preferred alternative be selected, air quality within and immediately adjacent to the fort would be temporarily affected by dust and vehicle emissions. These effects would result from hauling material and operating equipment during the construction period. Transient, low-level changes in emissions related to the project may be difficult to quantify, and would be quantified as short-term, localized and negligible. Because the park is within a metropolitan area, air quality is affected by vehicular and industrial emissions and by nearby construction and development activities. Therefore, air quality was dismissed as an impact topic in this document.

Ecologically critical areas or other unique natural resources: Fort Washington Park does not contain any designated ecologically critical areas, wild and scenic rivers, or other unique natural resources, as referenced in 40 Code of Federal Regulations 1508.27.

Endangered, threatened, or protected species and critical habitats: Coordination with the U.S. Fish and Wildlife Service revealed that no federally listed threatened or endangered species are known to exist at the Fort Washington property, nor does any known critical habitat exist at the park. Several bald eagle nests do are located at Piscataway Park, which lies directly across from Fort Washington, on the southern shore of Piscataway Creek. This site is approximately one mile away from Fort Washington Park. Additionally, Mason Neck, an important roosting and concentration area for bald eagles, is located along the Potomac River in Virginia. This is located approximately five miles downstream from Fort Washington Park, and is therefore beyond the area of impact to be analyzed. The bald eagle population is at a great enough distance from the stabilization activities as not to be affected. No further consultation pursuant to Section 7 of the Endangered Species Act is required.

Hazardous Materials in Interior Spaces. Because buildings within the fort were constructed prior to 1978 (the year lead-based paint was banned for consumer use) and before 1989 when the EPA imposed a ban on asbestos production and imports, buildings are assumed to contain these hazardous substances until proven otherwise. Surveys and sampling would be conducted to identify, characterize, and quantify the existence of the hazardous substances present in work areas and the extent to which these materials would be disturbed, and an appropriate management plans developed.

Lead compounds were historically an important component of many paints and were used extensively. They added excellent adhesion, drying, and covering abilities. Lead dust and chips are generated by mechanical disturbance of lead paint, such as grinding or sanding. Lead exposure by inhalation poses the greatest risk because lead fumes and fine dust are readily absorbed into the blood system. Most lead

poisonings are the result of prolonged exposure, not a single event. Federal regulation 40 Code of Federal Regulations 261-272 established identification, handling, and disposal requirements for lead containing wastes. In 1992, programs were established to reduce exposure to lead, principally from paint. The Interim Final Regulations of Lead in Construction Standards (29 Code of Federal Regulations 1926.62) issued by the Department of Labor, Occupational Safety and Health Administration established permissible exposure limits and associated health and safety requirements for workers involved in lead-based paint activities. The Environmental Protection Agency also has jurisdiction for setting standards for lead abatement and controls the handling and disposal of hazardous waste generated during a removal project.

Asbestos has been used extensively in a variety of construction materials including pipe and duct insulation, floor tiles, ceiling tiles, wall board, and roof and floor mastics because of its insulating and fire retardant properties. Asbestos presents a health hazard when particulates become airborne and are inhaled. The EPA regulates asbestos as a hazardous waste under the Toxic Substance Control Act, the Comprehensive Environmental Response and Liability Act, and the National Emission Standards for Hazardous Air Pollutants. The Occupational Safety and Health Act also regulates asbestos in regard to worker safety in production and removal of asbestos. Training and notification are necessary for any employee handling asbestos, including sampling and removal. Required work practices are covered in the Construction Standard for the Asbestos Industry (40 CFR 1926.1101 or CFR Title 8 Section 1529).

*Abatement plans***:** Once the extent of lead and asbestos presence and the degree of disturbance is determined, a hazardous materials management plan would be developed to protect workers, the public, and the environment from exposure to lead and asbestos dust and particles. This plan would comply with Occupational Safety and Health Act and Environmental Protection Agency regulations for the handling and disposal of these materials. Using prescribed tools and methods, demolition and removal of lead and asbestos materials would pose negligible to minor, short-term, adverse effects to the safety of work crews. Potential adverse effects to park staff and visitors would be negligible. This topic is dismissed from further analysis.

Noise and soundscapes: NPS *Management Policies 2001* states that the NPS will strive to preserve the natural quiet and natural sounds associated with the physical and biological resources of parks. Activities causing excessive or unnecessary unnatural sounds in and adjacent to parks will be monitored, and action will be taken to prevent or minimize unnatural sounds that adversely affect park resources or values, or visitors' enjoyment of them.

In accordance with this policy and *Director's Order #47 – Sound Preservation and Noise Management*, preservation of natural soundscapes associated with national park units is an important park mission. Natural soundscapes exist in the absence of human-caused noise. The natural ambient soundscape is the aggregate of all the natural sounds that occur in the park. The frequencies, magnitudes, and duration of human-caused sound considered acceptable vary among NPS units and are greater in developed areas than in rural settings.

Under the preferred alternative, equipment and vehicles involved in transportation, construction activities, and removal of waste material would generate the primary source of noise. Construction noise would be short-term, relatively low intensity/volume, and last only during daylight hours. Because the park is within a developing metropolitan area, the soundscape is affected by vehicular traffic and by nearby construction and development activities. Implementation of the preferred alternative would have no long-term consequences on the ambient soundscape of Fort Washington Park. Therefore, soundscapes and noise were dismissed as an impact topic in this document.

Floodplains and wetlands: Executive Orders 11988 "Floodplain Management" and 11990 "Protection of Wetlands" require an examination of impacts to floodplains and wetlands, of potential risk involved in placing facilities within floodplains, and protecting wetlands. NPS *Management Policies 2001*; *Director's*

Order #2: Planning Process Guidelines, and *Director's Order #12: NEPA Guidelines* provide direction on developments proposed in floodplains and wetlands.

Executive Order 11990, "Protection of Wetlands," requires federal agencies to avoid, where possible, impacts on wetlands. If required, a Statement of Findings in compliance with *Director's Order #77-1: Wetland Protection* and its accompanying *Procedural Manual #77-1* would address any concerns for wetlands. There are no jurisdictional wetlands in the project area or outside the project area that would be at risk should the preferred alternative be implemented. Therefore, this impact topic was dismissed, and no Statement of Findings will be prepared.

Executive Order 11988, "Floodplain Management," requires all federal agencies to avoid construction within the 100-year floodplain unless no other practical alternative exists. *Director's Order #77-2: Floodplain Management* directs the NPS to manage floodplains for their functional values and to site facilities where they will not be damaged by flooding. However, this order does not apply to historic or archeological structures, sites, or artifacts whose location is integral to their significance.

The site of Fort Washington, on the banks of the Potomac River, is integral to its historic significance as an element of our Capital defense. Neither alternative would affect the location of the fort within the floodplain. In addition, the preferred alternative would have only short-term effects on soil and vegetation resources within the floodplain, and would not interfere with proper floodplain function beyond the interference caused by the fort's original construction. There would be no long-term effects to the floodplain from increased tendency for downstream or upstream flooding as a result of implementing either alternative. Therefore, floodplains were dismissed as an impact topic in this document, and no Statement of Findings will be prepared.

Prime and unique agricultural lands: Prime farmland has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops. Unique agricultural land is land other than prime farmland that is used for production of specific high-value food and fiber crops. Both categories require that the land is available for farming uses. Lands within Fort Washington Park are not available for farming and therefore do not meet the criteria, and this topic is therefore dismissed.

Wilderness: The Wilderness Act of 1964 "established a National Wilderness Preservation System to be composed of federally owned areas designated by Congress as 'wilderness areas,' and these shall be administered for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness." Among other mandates are the protection of wilderness areas and the preservation of their wilderness character. Wilderness characteristics are defined in the Wilderness Act as:

- The earth and its community of life are untrammeled by humans, where humans are visitors and do not remain.
- The area is undeveloped and retains its primeval character and influence, without permanent improvements or human habitation.
- The area generally appears to have been affected primarily by the forces of nature, with the imprint of humans' work substantially unnoticeable.
- The area is protected and managed so as to preserve its natural conditions.
- The area offers outstanding opportunities for solitude or a primitive and unconfined type of recreation.

There are no designated wilderness areas within or adjacent to Fort Washington Park.

Prehistoric archeological resources: The likelihood of encountering buried, *in situ* prehistoric resources is quite low because Fort Washington was constructed on a filled terrace. The natural terrain in the area is characterized by deep drainages and ridges, and the extensive, previous disturbance required to fill and

grade the site would have disturbed prehistoric resources. There would be no effect to prehistoric resources and this topic is dismissed.

Ethnographic resources: No ethnographic resources or traditional cultural properties (ethnographic resources eligible for or listed in the National Register of Historic Places) have been identified within the area of potential effect. Because of European American settlement, American Indian tribes who once frequented the area no longer have traditional ties to what are now park lands. Neither are there American Indian Tribes traditionally associated with Fort Washington Park, nor have any contemporary groups or families in the area, possibly of various ethnic groups, been identified whose use of the park might mean links over time to particular park places where certain recreational activities may have occurred and contain meaning to group or family culture.

Indian trust resources: Indian trust lands and the resources on those lands, such as plants and animals, or other trust assets are owned by American Indian tribes or individuals but are held in trust by the United States of America with a fiduciary obligation to preserve these resources. Requirements are included in the Secretary of the Interior's Secretarial Order No. 3206, "American Indian Tribal Rites, Federal – Tribal Trust Responsibilities, and the Endangered Species Act," and Secretarial Order No. 3175, "Departmental Responsibilities for Indian Trust Resources." According to park and regional NPS staff, Indian trust assets do not occur within the park.

Conflicts with land use plans, policies, or controls: Whenever actions taken by the National Park Service have the potential to affect the planning, land use, or development patterns on adjacent or nearby lands, the effects of these actions must be considered. Neither of the alternatives addressed in this assessment would have the potential to affect other land use plans, policies, or controls beyond the park boundary.

Economics: Neither of the alternatives described in this environmental assessment would have notable effects on local or regional economic activities. Tourism and visitor contributions to the metropolitan Washington, D.C., economy would not be affected by continuation of current management or by stabilization of the fort. Construction activities associated with the action alternative would not contribute detectably to a metropolitan economy of approximately of 4.8 million residents, and this topic is dismissed.

Energy requirements and conservation potential: The National Park Service reduces energy costs, eliminates waste, and conserves energy resources by using energy-efficient and cost-effective technology. Energy efficiency is incorporated into the decision-making process during the design and acquisition of buildings, facilities, and transportation systems that emphasize the use of renewable energy sources. The action alternatives would not appreciably change the park's short- or long-term energy use or conservation practices. The gasoline and diesel fuel used during construction activities would not result in detectable changes in energy consumption in the Fort Washington vicinity, and this topic is dismissed.

Environmental justice: Executive Order 12898, "General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," requires that all federal agencies address the effects of policies on minorities and low-income populations and communities. Neither of the alternatives analyzed in this assessment would have disproportionate effects on populations as defined by the U.S. Environmental Agency's 1996 guidance on environmental justice.

Natural or depletable resource requirements and conservation potential: The use of fuel was addressed under the category "Energy requirements and conservation potential." To the maximum extent possible, the fort will be stabilized using the original stone and brick material. The use of new construction materials that would be incorporated into the fort would not be detectable compared to the volumes of these materials used for other construction in the Washington, D.C. area.